



BOHDAN W. OPPENHEIM , Ph.D.  
Professor of Systems Engineering (2005-present)  
Professor of Mechanical Engineering (1983-2009)

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## EDUCATION

- Ph.D, 1980, U. of Southampton U.K., Ship Science and Aeronautics, System Dynamics
- Naval Architect (post-graduate degree), 1974, Ocean Engineering, MIT
- M.S, 1972, Stevens Institute of Tech., Ocean Engineering
- B.S.(equiv.), 1970, Warsaw Technical University, Mechanical Engineering and Aeronautics ("MEL")
- Batory High School, Warsaw

## LOYOLA MARYMOUNT UNIVERSITY, SINCE 1981

- Associate Director for Healthcare Systems Engineering
- Professor of Systems Engineering (2005-present)
- Professor of Mechanical Engineering (1983-2009)
- Graduate Director of Mechanical Engineering (1995-2009)
- Former Member, Sabbatical Committee
- Director, US Department of Energy Industrial Assessment Center (2000-2007)
- Coordinator, MIT Lean Aerospace Initiative EdNet (2003-2013)

## NATIONAL ORGANIZATIONS

- INCOSE (Int. Council for Systems Engineers).
  - Founder and Co-Chair, Lean Systems Engineering Working Group, Leader of international effort by 14 experts and 110 members of Lean Systems Engineering Working group of INCOSE developing a new body of knowledge called Lean Systems Engineering, and a major product Lean Enablers for Systems Engineering.
  - In the leadership of the Healthcare Working Group.
- Member. Steering Committee and Groups of Experts, Joint MIT LAI/INCOSE/PMI/ Project developing Lean Enablers for Project Management, 2011-
- Director, US Department of Energy LMU Industrial Assessment Center, 2000-2007
- Member, Steering Committee, Lean Education Academic (national) Network
- Coordinator, Lean Aerospace Initiative Educational Network (MIT based)
- Member, National Polish-American Jewish-American Council

## HONORS AND AWARDS

- Shingo Prize (Research Award) for Best Research and Publication, 2010, for "Lean Enablers for Systems Engineering", B. Oppenheim, E. Murman, D. Secor, Journal of Systems Engineering, Vol. 14, No, 2011
- Shingo Prize (Research Award) for Best Research and Publication, 2013, for "The Guide to Lean Enablers for Managing Engineering Programs", B. Oppenheim is the second author, with 9 other authors, PMI, INCOSE, MIT LAI
- Fellow, INCOSE, 2015
- Outstanding Service Award, INCOSE 2015
- Fulbright Lecturing Award, Spring 2011 sabbatical, Lecturing in Poland, Italy, Russia, Norway, Sweden
- INCOSE (International Council for Systems Engineering) Best Product Awards to the Lean Systems Engineering Working Group for the product called Lean Enablers for System Engineering (leader), 2009
- Distinguished Engineering Educator Award, Los Angeles Council of Scientists and Engineers, 2007
- Fellow, Institution for the Advancement of Engineering
- INCOSE Award for Collaboration (for leading the collaborative effort between PMI, the MIT LAI, and INCOSE CAB companies to develop Lean Enablers for Program Management and Systems Engineering), 2012
- Susan C. Ruth Award for Outstanding Long Term Service to the LA Chapter of INCOSE, 2012

## INDUSTRIAL EXPERIENCE (CONSULTING AND PART-TIME)

- Consultant, California High Speed Rail/Alta Vista Solution, 2015-

- SpaceX, cooperation in Systems Engineering, 2014-2016
- Assessed 125 industrial plants for Productivity/Lean in California, 2000-2007, under the U.S. Department of Energy Industrial Assessment Program.
- The Aerospace Corporation, 1989-1994, part time Research Engineer. Author (with S. Rubin) of POGO simulator for U.S. liquid rockets, used by NASA and rocket industry
- Northrop Electronics, 1985-1989, part time MTS
- Global Marine Development, Newport Beach, Full time, 1974-1977, Naval Architect.
- Consultant to Endevco, Lean and Quality, 2004
- Consultant to Boeing Satellite Systems, 2001, 2003-2004, Lean Systems Engineering.
- Consultant to Capstone Turbine, Inc. Tarzana, CA, turbine engine dynamics, 1995-1996
- Consultant on dynamic mooring simulators for: PETROBRAS, Brazil; FLORAMAR, France; Giannotti, DC;
- Det Norske Veritas, Norway; Global Marine Drilling, Houston; ZAPATA, Houston; 1983-1990
- Consultant to NOAA, mooring dynamics, Washington DC
- Consultant to CASDE Co., L.A., capsizing of boats, 1981-81
- Consultant to US Coast Guard R&D, Washington, DC, stability of boats, 1980-81
- Consultant to TRW, L.A., OTEC plant design, 1982
- Consultant to Wolfson Marine Craft, U.K., modeling, 1977-80
- Consultant on Total Quality and Lean to 35 firms and governmental agencies in Poland, 1995- present

#### EXTERNAL GRANTS (\$1,937,000 total)

- Kaiser Permanente, PI, \$15,000, optimization of sample transportation system
- VA, VAR study, PI, \$150,000
- U.S. Department of Energy, PI, Industrial Assessment Center, \$1,400,000 (Years 1999-2007)
- NSF RET, Co-PI, \$100,000, (2003)
- NASA Dryden, Rhenium Project, Co-PI, \$57,000, (1995)
- NASA Dryden, Multimedia Laboratory equipment grant, PI, \$20,000, (1994)
- NASA Dryden, \$20,000, Thesis co-advisor, graduate fellowship "Artificial Intelligence in Aircraft Automation for Ron Broderick, (1996)
- GE, TQM Implementation, curriculum development grant, PI, \$20,000, (1991, 1992)
- W. Mellon Foundation, Co-PI, \$200,000, Establish Two LMU Technology Management/TQM Centers in Poland, (1995-99)
- LMU Marymount Institute, PI, \$5,000, TV documentary on Poland, (1993)
- CDC, PI, \$100,000 equipment grant for CAE, (1986)

#### CURRENT RESEARCH INTEREST

- Healthcare Systems Engineering, Application of Lean to Healthcare, Lean Project Management, Lean Product Development and Lean Systems Engineering
- Lean Enterprise

- Lean Manufacturing, Lean Suppliers Network
- Productivity
- Quality, variability reduction
- POGO stability of liquid rockets
- Vessel mooring dynamics and simulators

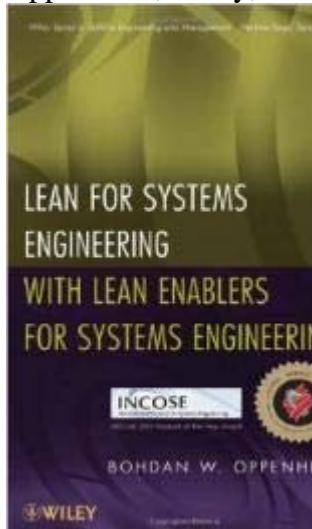
## EXTRA-CURRICULAR

- Lives in Santa Monica, California
- Two sons
- Ocean sailor, ASA 100-106 licenses
- FCC Technician Radio License
- Collector of modern Polish art
- Member, National Polish-American / Jewish-American Council ([www.npajac.org](http://www.npajac.org))
- Organizer and panelist of the 1999 LMU and 2001 Krakow conferences on the Polish Jewish and Church-Jewish relations. Two books. Book endorsements from Jerzy Giedroyc, Zbigniew Brzezinski, Jan Nowak-Jezioranski, Jerzy Turowicz, Rev. Wexler-Waszkinel.

## SELECTED PUBLICATIONS AND PRESENTATIONS

### **Books, Book Chapter and Technical Journals**

Book *Lean for Systems Engineering with Lean Enablers for Systems Engineering*, B. Oppenheim, Wiley, 2011



### **Book Endorsements**

"Bohdan W. Oppenheim has pulled together experience-based insights of experts across industry, government and academia into a comprehensive sourcebook for lean systems engineering principles and practices. This book can educate those new to lean engineering, as well as provide new insights and enablers that best-in-class organizations will want to adopt"  
**- Dr. Donna H. Rhodes, Principal Research Scientist, SEArI and LAI, Massachusetts Institute of Technology "**

"Lean for Systems Engineering" is targeted at the practitioner who is trying to make systems engineering more effective in her or his organization or program. Yet its scholarly underpinnings make the text very suitable for teachers. Educators and trainers who wish to weave lean thinking into their systems engineering curriculum will find this an invaluable text." -  
**Earll M. Murman, MIT Ford Professor of Engineering Emeritus, Port Townsend, WA. make systems**

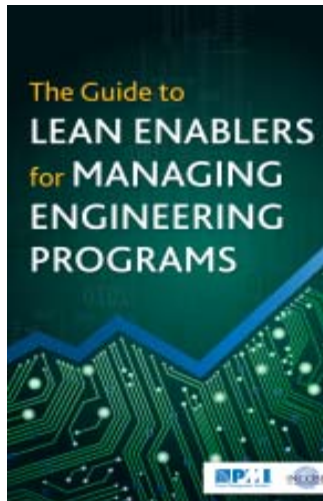
"At last, a book that distills years of research and scholarly inquiry into a concise and coherent form for both the student and practitioner. This book will become the favored guide and "must-read" for any engineer and manager trying to establish and maintain lean practices and principles in their systems engineering/product development processes."  
**- J. Robert Wirthlin, PhD, Lt Col, USAF, Air Force Institute of Technology, Program Director of the Graduate Research and Development Management Program; Visiting Faculty, US Air Force Center for Systems Engineering.**

"A vital contribution to linking lean practices to systems engineering. I will definitely use it as a reference for my course and writings on *A value approach to product and system development*".  
**- Dr. Stanley I. Weiss, Consulting Professor, Dept. of Aeronautics and Astronautics, Stanford University.**

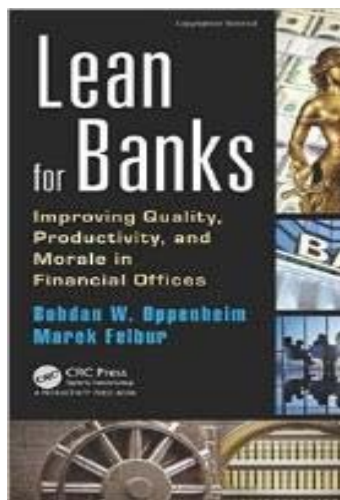
"Taking the opportunity to develop and refine the Lean Enablers for Systems Engineering provided clear direction for Lean Engineering Accelerated Planning at Rockwell Collins. The Lean Enablers form a solid basis for Lean Product Development. Following this checklist and methodology promotes Lean value and waste elimination - and common sense best practices."  
**- Deborah A. Secor, Principal Project Manager and Lean Master, Rockwell Collins.**

"Bo Oppenheim has been at the forefront of lean systems engineering for the better part of the last decade... An ardent advocate of lean systems engineering, the author has offered an honest appraisal of where lean systems engineering stands today. Practitioners interested in lean systems engineering will find the lean enablers especially useful. "  
**- Azad M. Madni, Ph.D., Professor and Director, SAE Program, Viterbi School of Engineering; Professor, Keck School of Medicine, University of Southern California**

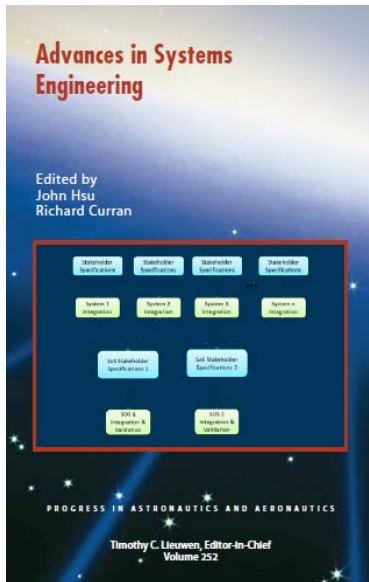
Book *The Guide to Lean Enablers for Managing Engineering programs*, Oppenheim (second author, with 8 co-authors), PMI-INCOSE-MIT LAI 2012



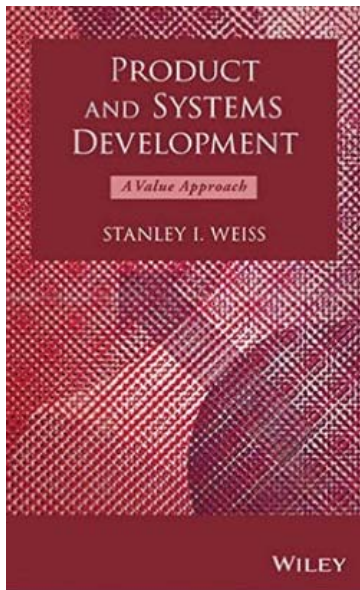
Book: *Lean for Banks, Improving Quality, Productivity and Morale in Financial Offices*, B.W. Oppenheim & M. Felbur, CRC Press, 2014



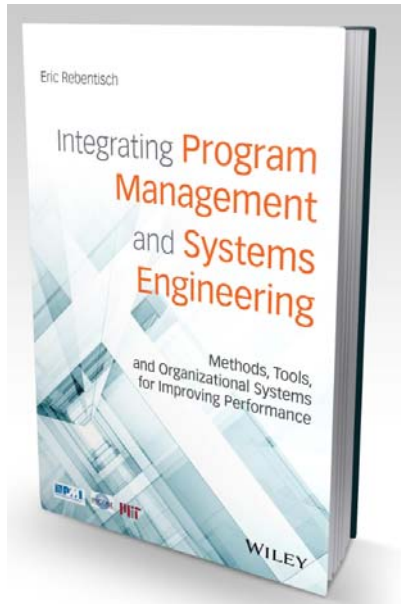
- Chapter on Lean Systems Engineering in the book “Advances in Systems Engineering”, Bohdan W. Oppenheim and Cecilia Haskins.



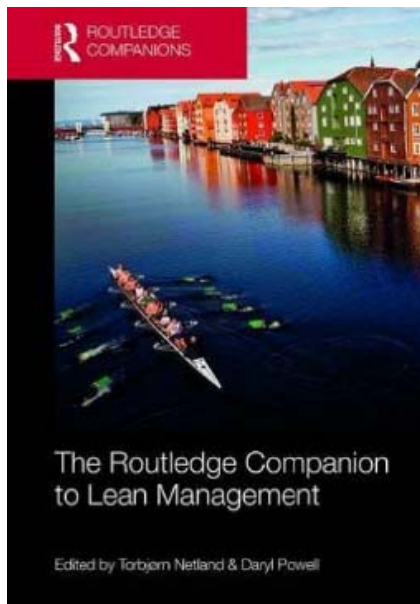
- Chapter on Lean Systems Engineering in the book “Product and Systems Development: A Value Approach”, Stanley I. Weiss, wiley 2013



- Introduction Chapter in the book “PM/SE Integration”, ed. by Eric Rebentish, (Contribution by B.W. Oppenheim), 2017



- Chapter on Lean in the book “The Routledge Companion to Lean Management”, B.W.Oppenheim and Cecilia Haskins. Routledge, 2016.



- INCOSE Systems Engineering Body of Knowledge (SEBoK), Chapter on Lean Healthcare, 2016.
- “Program Requirements: Complexity, Myths, Radical Change, and Lean Enablers”, B. W. Oppenheim, PMI White paper, May 2015
- “Premature Allocation of Program Requirements to Suppliers” , B. W. Oppenheim, *CrossTalk Defense Journal*, summer 2015
- “Lean Systems Engineering and Lean Enablers for Systems Engineering”, B. Oppenheim, Chapter in book “A Value Approach to Products Development” by S. Weiss, 2014



- *Chapter "Lean Systems Engineering", INCOSE Systems Engineering Handbook v. 4.0, 2015*
- *"Improving Affordability: Separating Research from Development and from Design in Complex Programs", B. W. Oppenheim, CrossTalk Defense Journal, 25<sup>th</sup> Anniversary Issue, July/August 2013, Vol. 26 No. 4.*
- *"Lean Enablers for Systems Engineering", Journal of Systems Engineering, February, 2011 (Best INCOSE Product Award, Shingo Award for Best Research and Publication)*
- *"Lean Enablers for Systems Engineering", CrossTalk Defense Journal, July/August 2009.*
- *Streamlining technical support at Vishay Siliconix, M. Salato and B. W. Oppenheim, December 2007, submitted to IEEE Trans. on Engineering Management, March, 2008.*
- *"Energy Conservation from Lean Manufacturing", invited chapter, Bohdan W. Oppenheim, Encyclopedia of Energy Engineering, Marcel Dekker, 2007.*
- *"Impact of Productivity on Energy Conservation", Strategic Planning for Energy and the Environment", Vol.26, No. 3, 2007,*
- *"Lean as a Way of Thinking" - 13 page cover-story interview with B. Oppenheim, Quality Management Journal (Zarzadzanie Jakoscia), Nr.3, Vol. 5, 2006.*
- *"Energy Conservation from Lean Manufacturing", Encyclopedia of Energy Engineering", Taylor & Francis, 2007*
- *"Lean Product Development Flow", J. of Systems Engineering, Vol. 7 (4), Nov.2004*
- *Management - a 20 page invited entry in The New Social Dictionary, with Z. Przasnyski, WAM Publication House, 2004*
- *"Lean Methods - New Revolution or Evolution of TQM?", Management Inspirations Series, Master of Business Administration, No.2(49), 2001.*
- *Introduction to Lean Methods by J. Womack and D.Jones, Odchudzanie Firm, Polish Edition, CIM, Warsaw, 2000.*
- *"Total Quality Requires Serious Training", w/Z. Przasnyski, Quality Progress (ASQ Journal), October 1999, pp. 63-73.*
- *"American Center for Quality Management", with Z. Przasnyski, I. Durluk, in Polish, Ekonomika Organizacji Przedsiębiorstwa, 7/558, June 1996*
- *"Advanced Pogo Stability Analysis for Liquid Rockets", w/S.Rubin, Journal of Spacecraft and Rockets, AIAA, Vol.30, Number 3, May-June 1993, pp 360-373.*
- *"Pogo Suppression on Atlas II", Quarterly Technical Report, Vol. 10, Number 1, The Aerospace Corporation, 1991.*
- *"Interactive Design and Operations of Moorings", Trans. ASME, Journal of Offshore Mechanics and Arctic Engineering, November 1989.*
- *"Polynomial Approximations to Mooring Forces in Equations of Low-Frequency Vessel Motions", w/P.A.Wilson, J. of Ship Research, Vol. 26, No 1, March 1982, pp16-24*
- *"Low-Frequency Dynamics of Moored Vessels", w/P.A.Wilson, Marine Technology, Vol.19, No.1, Jan.1982, pp1-22*
- *"Static 2-D Solution of a Mooring Line of Arbitrary Composition in the Vertical and Horizontal Operating Modes, w/P.A.Wilson, Int. Shipbuilding Progress, Vol. 29, No. 334, June 1982.*
- *Continuous Digital Simulation of the Second-Order Slowly Varying Wave Drift Force", w/P.A.Wilson, J. of Ship Research, Vol.24, Number 3, Sept. 1980*

## INVITED LECTURES AND KEYNOTE TALKS

### **Lectures on Healthcare Systems Engineering:**

- UCLA Executive Leadership Council
- CSULB Health Program
- Mills College
- Polish Langas Group at LMU
- PIE Club, Riverside
- Langas Group, Warsaw
- LMU (6 times)
- VA Los Angeles

### **Lectures about Lean Systems Engineering and Lean Enablers for Systems Engineering:**

- Loyola Marymount University, Los Angeles (4)
- INCOSE- LA Miniconference, Organizer of Panel on Systems Thinking, 2014
- INCOSE CSER- Organizer of sessions on Lean and Agile, 2014
- INCOSE -Cedar Rapids (Oct. 2007)
- Northrop Grumman, Jan. 2009
- Am. Soc. Mfg. Engineers, Feb. 2009
- INCOSE- Israel (2), March 3, 2009
- INCOSE- Los Angeles, March 21, 2009
- Boeing Lean Conference, April 2009
- IPPDE, Denver, 2009
- MIT Club of S.C., 2009
- INCOSE- France, EADS and AFIS, May 26, 2009
- INCOSE- Seattle, September 2009
- The Aerospace Corporation, Sept. 2009
- Booz Allen Hamilton, Los Angeles, Oct. 2009
- INCOSE-University College London, Jan. 2010
- Stevens Institute of Technology, Feb. 17, 2010
- Naval Postgraduate School, Monterrey, CA, Feb. 24, 2010
- MIT LAI Knowledge Exchange Event, Dana Point, March 23, 2010
- Lean Software Conference, Atlanta, GA, April 25, 2010
- EuSec, Stockholm, May 23-26, 2010
- INCOSE IS, Chicago, July 11-15
- Naval Postgraduate School, Sept. 22, 2010
- Partners in Business, Utah State University, Sept. 29, 2010
- Kongsberg Defense Systems, Oslo, Norway, Nov. 23., 2010
- Industrial Forum of Kongsberg, Oslo, Nov. 24, 2010
- Politecnico di Bari, Italy, May 24, 2011
- Politecnico di Milano, Italy, May 26, 2011
- Sapienza University di Roma, May, 27, 2011
- Akademia Obrony Narodowej, Warsaw, April 2011
- Polish Academy of Sciences, Institute for Systems Research, Warsaw, April 2011
- Polish Academy of Sciences, Institute for Systems Research, Warsaw, June 2011
- Politechnika Wroclawska, May 2011

- National Research Technological University MISA, Moscow, May 2011

### **Lectures about Lean Product Development Flow invented by B.W. Oppenheim**

- MIT Engineering Systems, April 2004
- MIT Lean Aerospace Initiative Seminar, April 15, 2004
- Lean Aerospace Initiative Plenary Conf., Dana Point, January, 2004.
- LAI Educational Network Annual Meeting, November 10, 2005, USC and Northrop Grumman
- Airbus, Hamburg, May 11-12, 2006
- Lean Business Systems and Beyond, Advanced Production Management Systems Conference, Wroclaw, Poland, Sep.18-20
- USC, Systems Engineering, Lean Operations SAE599, March 21, 2006 (DVD available)
- USC, Systems Engineering, Lean Operations SAE599, October 4, 2006 (DVD available)
- Lean Enterprise Conference, Boeing IDS, April 25, 2006
- MIT Lincoln Labs, Sept. 23, 2007,
- Mars, Poland, December 19, 2007
- France Telecom (PL), Warsaw, January 3, 2007
- Annual IFIP Conference, Wroclaw, June 19, 2007
- Kongsberg Defense Systems, Oslo, Norway, Nov. 23, 2010
- Industrial Forum of Kongsberg, Oslo, Nov. 24, 2010

### **Non-Technical Journals, Books and Book Chapters**

- Rachunek Sumienia: Kosciol Polski wobec Antysemityzmu, 1989-1999", Editor, WAM, Cracow, ISBN 83-7097-669-7, 1999
- Examination of Conscience-The Polish Church Confronts Anti-Semitism, 1989-1999", Editor, LMU, Los Angeles, March 1999.
- "The Polish Church Examines Its Conscience", w/T. Rausch, America, July-August 1999, pp. 19-20.
- "Mature for Reconciliation", WIEZ (in Polish), 9(491), 1999, pp. 68-77, Warsaw.
- "Stereotypes in Polonia", WIEZ (in Polish,), 10(492), October 1999, pp. 135-140, Warsaw.
- Foreword to the Polish Edition of Contemporary Priesthood by T. Rausch, by B.Oppenheim and T. Rausch, WAM, Krakow, 1996.
- "Social Role of the Church in Recent Poland; Seven Interviews." Zeszyty Historyczne No. 108. The Institut Litteraire, Maison Lafitte, Paris, France, 1994.

### **Selected Technical Proceedings, Published Reports, Keynote Presentations**

- " Lean Product Development Flow ", two-day invited workshop for Airbus staff, Hamburg, May 11-12, 2006
- " Lean Product Development Flow ", invited keynote opening speech, Lean Business Systems and Beyond, Advanced Production Management Systems Conference, Wroclaw, Sept.18-20

- " LEAN - Lean Education Academic Network ", invited keynote closing speech, Lean Business Systems and Beyond, Advanced Production Management Systems Conference, Wroclaw, Sept.18-20
- " Lean Product Development Flow ", invited 3-hour seminar, USC, Systems Engineering, March 21, 2006
- " Lean Product Development Flow ", invited 3-hour seminar, USC, Systems Engineering, October 4, 2006 (DVD available)
- " Lean Product Development Flow ", invited presentation, Lean Enterprise Conference, Boeing IDS, April 25, 2006
- " Academia (LMU|LA) - Industry - LAI - Government; Partnerships, Synergy, Mutual Benefits " , invited presentation, Lean Enterprise Conference, Boeing IDS, April 25, 2006

### **Selected Non-Technical Proceedings and Presentations**

1. Examination of Conscience, Midrasz (in Polish), Nr.7-8 (27-28), 1999, Warsaw.
2. Commemoration of the Sixtieth Anniversary of the Nazi and Soviet Invasions of Poland, American Association for Polish-Jewish Studies, Vol. 8, No.3, Cambridge, MA, 1999.
3. Los Angeles or Czestochowa, Polonia Kalifornijska, Nr. 3/4 (6), 1999.

### **Technical Video**

- Director, producer: Integrated Prototyping, LMU M.E. Video Laboratory. (Technical consultant: R. Noorani.) Produced for the NSF, 1998.

### **Non-Technical Video**

- Director, producer: The Polish Cross, video, 60 minutes, historical interviews with Polish leaders about the controversial social role of the Catholic Church in Poland: Prof. J. Kloczowski, KUL; Prof. J. Galkowski, KUL; K. Zanussi, film director; Fr. J. Mac, Rzeszow Cathedral; Prof. A. Wierzbicki, KUL; J. Wozniakowski, ZNAK; Prof. T. Zielinski; J. Turowicz, Tygodnik Powszechny; A. Malachowski, Parliament leader; Gen. W. Jaruzelski; J. Urban; A. Kwasniewski, former President of Poland; Fr. Prof. J. Tischner, PAP; Bp. B. Dembowski, Wloclawek; Fr. W. Giertych, OP; Artur Zawisza, politician, and others. 10 showings in Europe and U.S. Taped in 1993 by Prof. Bohdan W. Oppenheim from LMU in Los Angeles.
  - Later published in Zeszyty Historyczne 108 by Institute Littéraire in Paris by J. Giedroyc.
  - Youtube: English version: <https://www.youtube.com/watch?v=FwftuCe--CM>;  
Polska wersja: <https://www.youtube.com/watch?v=muTNUNEajNk>